

What is Claimed Is:

1. A memory for storing temporally sequential information that is not a serial sequential access memory, comprising:

parallel arrays of fixed memory storage units;

means for applying the temporally sequential information to the array of fixed memory storage units; and

means for successively activating each of the fixed memory storage units or linked arrays of said units in sequence to store or retrieve corresponding time slices of the temporally sequential information.

2. The memory according to claim 1, wherein the temporally sequential information is applied along parallel inputs to multiple temporally linked arrays of fixed memory storage units, such that units in one array are activated to store information of the parallel inputs at one point in time, whereas units in other arrays are successively enabled to store information from the same parallel inputs at subsequent sequential points in time.

3. The memory according to claim 1, wherein the array of fixed interconnected memory storage units includes semiconductor memory devices.

4. The memory according to claim 3, wherein:

said means for applying includes an input bus or buses coupled to inputs of a first semiconductor memory device or linked array of said devices, and a second semiconductor memory device, or linked array of said devices, adjacent functionally to the first semiconductor memory device or array; and wherein

said means for successively activating includes a pulse generator for generating a pulse that enables storage of input data and a delay clock element for delaying the enabling

pulse, said first semiconductor memory device or array being responsive to pulse to latch data presented at inputs thereof and said second semiconductor memory device or array being responsive to subsequent delayed pulse to latch data presented at inputs thereof.

5. The memory according to claim 1, wherein the array of fixed interconnected memory storage units includes portions of a holographic recording medium.

6. The memory according to claim 5, wherein:

said means for applying includes means for applying an information-containing holographic beam through separate holographic emitters or other means to multiple portions of the holographic recording medium; and

said means for successively activating includes a clock element or delaying device for rapidly moving or applying a reference beam from a first of the portions of the holographic recording medium to a second of the portions of the holographic recording medium, such that temporally sequential variations of the said holographic beam are recorded successively in distinct portions.

7. The memory according to claim 1, further comprising:

means for successively activating each of the fixed memory storage units or interconnected arrays of said units in the same temporal sequence in which they were activated during storage to retrieve the corresponding time slices of the temporally sequential information.

8. The memory according to claim 7, wherein the array of fixed memory storage units includes semiconductor memory devices.

9. The memory according to claim 7, wherein the array of fixed memory storage units includes portions of a holographic recording medium.

10. The memory according to claim 1, wherein the array of fixed memory storage units includes magnetic media.

11. The memory according to claim 7, wherein the array of fixed memory storage units including magnetic media.

12. A memory for retrieving temporally sequential information, comprising:
arrays of fixed memory storage units;

means for applying and storing the temporally sequential information in a specified spatial sequence of arrays of fixed memory storage units; and

means for successively activating each of the fixed memory storage units in the spatial sequence to retrieve the corresponding time slices of the stored temporally sequential information.

13. A method of storing temporally sequential information in an array of fixed memory storage units, comprising the steps of:

applying the information to spatially distinct arrays of fixed memory storage units;
and

successively activating each of the fixed memory storage units or simultaneously-activated arrays of said units in sequence to store a corresponding time slice of the temporally sequential information, one time slice in each unit or linked array.

14. The method according to claim 13, further comprising the step of:
successively activating each of the fixed memory storage units or simultaneously activated arrays of said units in the spatial sequence to retrieve the corresponding time slices of the temporally sequential information.

15. The method according to claim 13, wherein the step of applying includes the step of applying the temporally sequential information to the arrays of fixed memory storage units in parallel lines or waves.

16. The method according to claim 13, wherein the arrays of fixed memory storage units includes semiconductor memory devices.

17. The method according to claim 16, wherein:
the step of applying the temporally sequential information to the array of fixed memory storage units includes the step of:

applying the temporally sequential information to an input bus that is coupled to inputs of a first semiconductor memory device or to a first array of simultaneously activated devices and a second semiconductor memory device or second array of such devices; and

the step of successively activating each of the fixed memory storage units or array of said units in sequence includes the steps of:

transmitting a pulse to a first semiconductor memory device or array, said first semiconductor memory device or array being responsive to the pulse to latch data presented at inputs thereof;

delaying or incrementing the pulse; and

transmitting the delayed pulse or second pulse to a second semiconductor memory device or array, adjacent functionally to the first semiconductor memory device, said second semiconductor memory device or array, said second semiconductor memory devices or array being responsive to the delayed or incremented second pulse to latch data presented at inputs thereof.

18. The method according to claim 13, wherein the array of fixed memory storage units includes portions of a holographic recording medium.

19. The method according to claim 13, wherein:

the step of applying the temporally sequential information to the array of fixed memory storage units includes the step of applying a temporally varying holographic beam to the multiple portions of the holographic recording medium; and

the step of successively activating each of the fixed memory storage units or arrays of said units in sequence includes the step of moving or applying a reference beam to a first of the portions of the holographic recording medium and then to a second of the portions of the holographic recording medium.